CLMPTO

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08/18/03

1.Improved method for production of a rotor (10) of a centrifugal compressor, wherein the said rotor (10) is produced from a monolithic disc, characterised in that the said disc is worked in a radial direction by at least one tool (20) of a numerical control machine, such as to remove shavings, so as to produce radial cavities (12) in the said rotor (10).

2.Improved method according to claim 1, characterised in that a first tool (20) works, starting from an outer diameter of the said disc, until an outer portion of the said radial cavity (12) is produced.

3.Improved method according to claim 2, characterised in that the said first tool (20) advances with successive terracing operations, and works until an intermediate depth is reached relative to an overall width of a circular ring of the said monolithic disc.

4.Improved method according to claim 3, characterised in that a second tool (20) works, starting from an inner diameter of the said disc, until it reaches the said outer cavity, thus completing the said radial cavity (12).

5.Improved method according to claim 4, characterised in that the said first tool (20) and the said second tool (20) are the same tool (20) of the said numerical control machine.

6.Improved method according to claim 4, characterised in that the said first tool (20) and the said second tool (20) work simultaneously, the said tools (20) being arranged on two axes which are controlled by at least one numerical control machine.

7.Improved method according to claim 1, characterised in that a second tool (20) works from an inner diameter of the said disc, until an inner portion of the said radial cavity (12) is produced.

8.Improved method according to claim 7, characterised in that the said second tool (20) advances with successive terracing operations and works until an intermediate

depth is reached relative to an overall width of a circular ring of the said monolithic disc.

9.Improved method according to claim 8, characterised in that a first tool (20) works starting from an outer diameter of the said disc, until it reaches the said inner cavity, thus completing the said radial cavity (12).

10.Improved method according to claim 9, characterised in that the said first tool (20) and the said second tool (20) are the same tool (20) of the said numerical control machine.

11.Improved method according to claim 6, characterised in that, before working with the said tools (20), a preliminary stage is activated in order to determine the feasibility of the working, i.e. to ascertain whether there will be superimpositions of the said tools (20) during working.

12.Improved method according to claim 11, characterised in that, if there are superimpositions, an abnormality is indicated, and this interrupts a working programme.

13.Improved method according to claim 1, characterised in that tools (20) are used in succession, starting with the shortest from amongst those available.

14.Improved method according to claim 1, characterised in that a diameter of the said tool (20) is selected according to a radius of connection at the base of the blade.

15.Improved method according to claim 1, characterised in that the said working to remove shavings is that of the type known by the name of pocket.

16.Improved method according to claim 15, characterised in that, after a first stage of so-called pocketing, which is carried out with a single inclination of the axis of the said tool (20) until a maximum depth is reached, also using the possibility of working with an undercut owing to the design of the said tool (20), a command is transmitted to the axis to take the said tool (20) to a different inclination.

17.Improved method according to claim 16, characterised in that the said different inclination is implemented by a numerical control machine which has five controlled axes.

18.Improved method according to claim 1, characterised in that, after the said working to remove shavings, the said rotor (10) is subjected to heat treatment.

19.Improved method according to claim 18, characterised in that the said heat treatment is followed by stages of checking of the dimensions, balancing, and dynamic checking of the said rotor (10).

20.Improved method according to claim 1, characterised in that the said rotor (10) is made of steel.

Claim 21 (Cancelled)